

REMARKS

Claims 1, 3, 4, 6-11 and 15-17 have been amended. Claims 2 and 18 have been canceled without prejudice. Claims 1 and 3-17 remain in the application. Support for the amendment may be found in Specification, for example in paragraphs [0014] through [0016], FIGS. 3 and 4, and throughout the rest of the disclosure. Applicant asserts that no new matter has been added. Reconsideration of the Application is hereby requested

Objections to the Claims

Claim 18 was objected to because “the area” had no antecedent basis. Applicant has canceled Claim 18, without prejudice, thereby rendering this objection moot.

Claim Rejections

Rejections Under 35 U.S.C. § 112

Claims 1-18 were rejected under 35 U.S.C. § 112, as being indefinite. Regarding this rejection as applied to Claims 1-17, the action indicates that it was not clear how computing units could be placed in an area that was “at most” only the area that the data paths cover. To clarify, Applicant has amended Claims 1 and 11 to eliminate the “at most” phrase and to recite that the data paths are contained on a first area, in a manner suggested by the last sentence of paragraph 4 of the Office Action. Regarding this rejection as applied to Claim 18, Applicant has canceled Claim 18, without prejudice, thereby rendering this rejection moot. Thus, it is believed that this rejection has been overcome and Applicant respectfully requests that it be withdrawn.

Rejections Under 35 U.S.C. § 102

Claims 1, 2, 4-6, 8, 10-14 and 18 were rejected under 35 U.S.C. § 102(e), as being anticipated by US 6697979 issued to Vorbach et al.

With existing silicon chips, the size of the data paths that allow functional units to communicate limits the number of functional units that may be placed on the chip area. Given that the data paths take up more chip area than the area of the functional units beneath the data paths, a substantial amount of chip area goes unused. The present invention makes use of chip area on which additional functional units cannot be placed by placing duplicate copies of the functional units on the otherwise unused area. The duplicate copies of the functional units communicate via the same data paths as the original functional units and, therefore, do not require additional data paths. The duplicate copies provide redundancy to the chip: when an error is detected in an original functional, it is disabled and the duplicate copy is activated. Thus, the invention provides error correction through redundancy without adding to the chip area necessary for the circuit and without requiring additional data paths in the circuit.

To this end, Applicant has amended the independent claims to make clear that the second functional unit is placed in the second area, which is a portion of the first area and is smaller than the first area of the chip. Also, the amendments add the limitation of the second area being incapable of receiving thereon a functional unit that would require a data path that is different from the plurality of data paths.

Vorbach, while disclosing a redundant error correction circuit, does not disclose a circuit that takes advantage of otherwise unusable chip area for the placement of redundant functional units. The limitation of using chip area that cannot be otherwise used is completely absent from Vorbach. Because Vorbach fails to disclose placement of redundant functional

units of chip area that cannot be used for new functional units due to limitations imposed on the chip design as a result of the area required for the data paths, Claims 1 and 11 are not anticipated by Vorbach and, therefore, Applicant respectfully requests that Claims 1 and 11 (and the claims depending therefrom) be allowed.

Rejections Under 35 U.S.C. § 103

Claims 3, 15 and 16 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Vorbach in view of US 7017074, issued to Okin.

The addition of Okin to Vorbach completely fails to teach or suggest use of otherwise unusable chip area for the placement of redundant functional units. As Claims 3, 15 and 16 take the limitations of Claims 1 and 11, respectively, Applicant believes that these claims are not obvious over Vorbach in view of Okin for the reasons presented with respect to Claims 1 and 11 above. For this reason Applicant respectfully requests that Claims 3, 15 and 16 be allowed.

Prior Art Made of Record

In addition to the remarks presented above, Applicant asserts that the remaining prior art made of record neither anticipates, nor renders obvious the claimed invention.

CONCLUSION

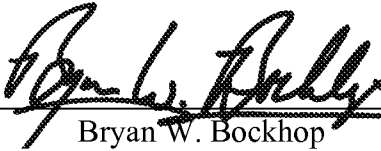
Applicant believes that the rejections have been overcome for the reasons recited above. Therefore, Applicant respectfully requests that all remaining claims be allowed and that a timely Notice of Allowance be issued.

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No addition fees are believed due. However, the Commissioner is hereby authorized to charge any additional fees that may be required, including any necessary extensions of time, which are hereby requested, to Deposit Account No. 55992.

03/22/2007

Date



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